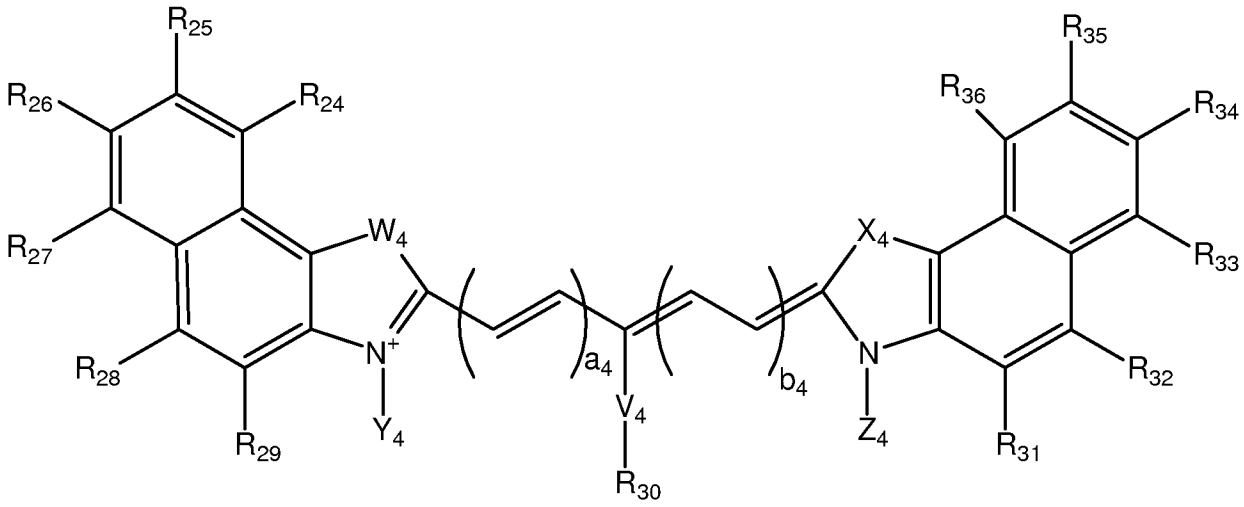
This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

1-3. (CANCELED)

4. (PREVIOUSLY PRESENTED) A pharmaceutical composition comprising an effective amount of the compound of formula 4



Formula 4

for a diagnostic or therapeutic procedure and a pharmaceutically acceptable carrier for administration to a mammal wherein at least one of W_4 and X_4 is S and the other is selected from the group consisting of $-CR_cR_{d,}$ $-NR_c$, -O-, and -S-; R_{24}, R_{25}, R_{26}, R_{27}, R_{28}, R_{29}, R_{30}, R_{31}, R_{32}, R_{33}, R_{34}, R_{35} and R_{36}, Y_4, and Z_4 are independently selected from the group consisting of C1-C10 alkoxyl, C1-C10 polyalkoxyalkyl, C1-C20 polyhydroxyalkyl, C5-C20 polyhydroxyaryl, glucose, saccharides, amino, C1-C10 aminoalkyl, cyano, nitro, halogen, hydrophilic peptides, arylpolysulfonates, C1-C10 alkyl, C5-C20 aryl, $-SO_3T$, $-CO_2T$, -OH, $-(CH_2)_aSO_3T$, $-(CH_2)_aOSO_3T$, $-(CH_2)_aNHSO_3T$, $-(CH_2)_aCO_2(CH_2)_bSO_3T$, $-(CH_2)_aOCO(CH_2)_bSO_3T$, $-(CH_2)_aCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCO(CH_2)_bSO_3T$, $-(CH_2)_aNHCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCSNH(CH_2)_bSO_3T$, $-(CH_2)_aOCONH(CH_2)_bSO_3T$, $-(CH_2)_aPO_3HT$, $-(CH_2)_aPO_3T_2$, $-(CH_2)_aOPO_3HT$, $-(CH_2)_aOPO_3T_2$, $-(CH_2)_aNHPO_3HT$, $-(CH_2)_aNHPO_3T_2$, $-(CH_2)_aCO_2(CH_2)_bPO_3HT$, $-(CH_2)_aCO_2(CH_2)_bPO_3T_2$, $-(CH_2)_aOCO(CH_2)_bPO_3HT$, $-(CH_2)_aOCO(CH_2)_bPO_3T_2$, $-(CH_2)_aCONH(CH_2)_bPO_3HT$, $-(CH_2)_aCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCO(CH_2)_bPO_3HT$, $-(CH_2)_aNHCO(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCONH(CH_2)_bPO_3HT$, $-CH_2)_aNHCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3T_2$,

$-(CH_2)_aOCONH(CH_2)_bPO_3HT$, and $-(CH_2)_aOCONH(CH_2)_bPO_3T_2$, $-CH_2(CH_2-O-CH_2)_c-CH_2-OH$, $-(CH_2)_d-CO_2T$, $-CH_2-(CH_2-O-CH_2)_e-CH_2-CO_2T$, $-(CH_2)_f-NH_2$, $-CH_2-(CH_2-O-CH_2)_g-CH_2-NH_2$, $-(CH_2)_h-N(R_a)-(CH_2)_I-CO_2T$, and $-(CH_2)_j-N(R_b)-CH_2-(CH_2-O-CH_2)_k-CH_2-CO_2T$; V_4 is a single bond or is selected from the group consisting of -O-, -S-, -Se-, and $-NR_a$; a_4 and b_4 vary from 0 to 5; a, b, d, f, h, i, and j independently vary from 1-10; c, e, g, and k independently vary from 1-100; R_a, R_b, R_c, and R_d are defined in the same manner as Y_4; and T is either H or a negative charge.

5. (PREVIOUSLY PRESENTED) The composition as in claim 4 further comprising a contrast agent.

6. (PREVIOUSLY PRESENTED) The composition as in claim 4 wherein the compound comprises a radioactive halogen.

7. (PREVIOUSLY PRESENTED) The composition as in claim 4 wherein at least one R group of the compound is replaced by a polyamino carboxylic acid.

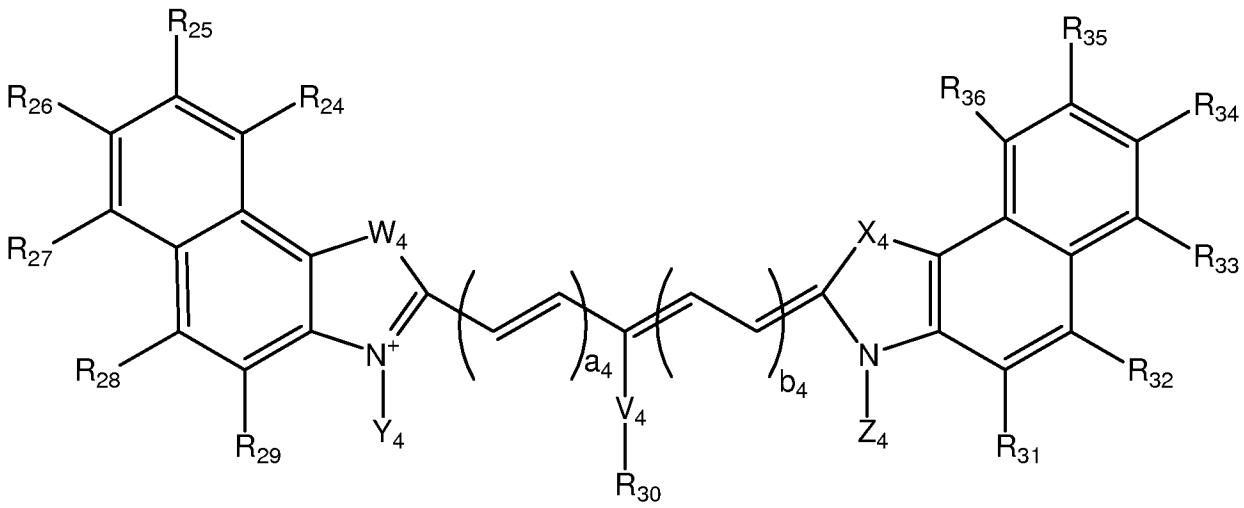
8. (ORIGINAL) The composition of claim 7 further comprising a radioactive metal ion or a paramagnetic metal ion.

9. (PREVIOUSLY PRESENTED) The composition as in claims 4, 6, or 7 formulated as at least one of a liposome, a micell, a microcapsule, or a microparticle.

10. (PREVIOUSLY PRESENTED) The composition as in claims 4, 6, or 7 formulated as at least one of iron oxide particles, silver particles, or gold particles.

11-13. (CANCELED)

14. (PREVIOUSLY PRESENTED) A method for performing therapy or diagnostic imaging comprising administering to a mammal an effective amount of the compound of formula 4



Formula 4

wherein at least one of W_4 and X_4 is S and the other is selected from the group consisting of $-CR_cR_d$, $-NR_c$, -O-, and -S-; R_{24}, R_{25}, R_{26}, R_{27}, R_{28}, R_{29}, R_{30}, R_{31}, R_{32}, R_{33}, R_{34}, R_{35} and R_{36}, Y_4, and Z_4 are independently selected from the group consisting of C1-C10 alkoxyl, C1-C10 polyalkoxyalkyl, C1-C20 polyhydroxyalkyl, C5-C20 polyhydroxyaryl, glucose, saccharides, amino, C1-C10 aminoalkyl, cyano, nitro, halogen, hydrophilic peptides, arylpolysulfonates, C1-C10 alkyl, C5-C20 aryl, $-SO_3T$, $-CO_2T$, -OH,
$-(CH_2)_aSO_3T$, $-(CH_2)_aOSO_3T$, $-(CH_2)_aNHSO_3T$, $-(CH_2)_aCO_2(CH_2)_bSO_3T$,
$-(CH_2)_aOCO(CH_2)_bSO_3T$, $-(CH_2)_aCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCO(CH_2)_bSO_3T$, $-(CH_2)_aNHCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCSNH(CH_2)_bSO_3T$,
$-(CH_2)_aOCONH(CH_2)_bSO_3T$, $-(CH_2)_aPO_3HT$, $-(CH_2)_aPO_3T_2$, $-(CH_2)_aOPO_3HT$,
$-(CH_2)_aOPO_3T_2$, $-(CH_2)_aNHPO_3HT$, $-(CH_2)_aNHPO_3T_2$, $-(CH_2)_aCO_2(CH_2)_bPO_3HT$,
$-(CH_2)_aCO_2(CH_2)_bPO_3T_2$, $-(CH_2)_aOCO(CH_2)_bPO_3HT$, $-(CH_2)_aOCO(CH_2)_bPO_3T_2$,
$-(CH_2)_aCONH(CH_2)_bPO_3HT$, $-(CH_2)_aCONH(CH_2)_bPO_3T_2$,
$-(CH_2)_aNHCO(CH_2)_bPO_3HT$, $-(CH_2)_aNHCO(CH_2)_bPO_3T_2$,
$-(CH_2)_aNHCONH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCONH(CH_2)_bPO_3T_2$,
$-(CH_2)_aNHCSNH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3T_2$,
$-(CH_2)_aOCONH(CH_2)_bPO_3HT$, and $-(CH_2)_aOCONH(CH_2)_bPO_3T_2$, $-CH_2(CH_2-O-CH_2)_c-CH_2-OH$, $-(CH_2)_d-CO_2T$, $-CH_2-(CH_2-O-CH_2)_e-CH_2-CO_2T$, $-(CH_2)_f-NH_2$, $-CH_2-(CH_2-O-CH_2)_g-CH_2-NH_2$, $-(CH_2)_h-N(R_a)-(CH_2)_I-CO_2T$, and $-(CH_2)_j-N(R_b)-CH_2-(CH_2-O-CH_2)_k-CH_2-CO_2T$; V_4 is a single bond or is selected from the group consisting of -O-, -S-, -Se-, and $-NR_a$; a_4 and b_4 vary from 0 to 5; a, b, d, f, h, i, and j independently vary from 1-10; c, e, g, and k independently vary from 1-100; R_a, R_b, R_c, and R_d are defined in the same manner as Y_4; and T is either H or a negative charge, and thereafter performing the diagnostic or therapeutic procedure.

15. (PREVIOUSLY PRESENTED) The method as in claim 14 wherein said therapy or diagnostic imaging utilizes light of wavelength in the region of 350-1300nm.

16. (PREVIOUSLY PRESENTED) The method of claim 15 wherein said therapy or diagnostic imaging comprises monitoring a blood clearance profile by fluorescence using light of wavelength in the region of 350 nm to 1300 nm.

17. (PREVIOUSLY PRESENTED) The method as in claim 14 wherein said therapy or diagnostic imaging comprises monitoring a blood clearance profile by absorption using light of wavelength in the region of 350 nm to
1300 nm.

18. (PREVIOUSLY PRESENTED) The method as in claim 14 wherein the compound contains a radioactive halogen and imaging the mammal by at least one of optical imaging and nuclear imaging.

19. (PREVIOUSLY PRESENTED) The method as in claim 14 where the compound administered has at least one R group replaced by a polyamino carboxylic acid.

20. (PREVIOUSLY PRESENTED) The method as in claim 14 wherein the compound administered further comprises a radioactive metal ion or a paramagnetic metal ion.

21. (PREVIOUSLY PRESENTED) The method as in claims 19, or 20 further comprising imaging by at least one of optical imaging, nuclear imaging, or magnetic resonance imaging.

22. (PREVIOUSLY PRESENTED) The method as in claims 14, or 19 wherein the compound is administered in a formulation selected from at least one of liposomes, micelles, microcapsules, or microparticles.

23. (PREVIOUSLY PRESENTED) The method as in claims 14, 18, 19, or 20 wherein the compound is administered in a formulation selected from at least one of iron oxide particles, silver particles, or gold particles.

24. (PREVIOUSLY PRESENTED) The method as in claims 19 or 20 further comprising administering a non-optical contrast agent and imaging by at least one of magnetic resonance, ultrasound, x-ray, positron emission tomography, computed tomography, optoacoustic imaging, and single photon emission computed tomography.

25. (PREVIOUSLY PRESENTED) The method as in claims 19 or 20 wherein said therapy or diagnostic imaging is for physiological function monitoring.

26. (PREVIOUSLY PRESENTED) The method as in claims 19 or 20 wherein said therapy or diagnostic imaging is for at least one of renal function monitoring, cardiac function monitoring, and kidney function monitoring.

27. (PREVIOUSLY PRESENTED) The method as in claims 19 or 20 wherein said therapy or diagnostic imaging is for determining organ perfusion *in vivo*.

28. (PREVIOUSLY PRESENTED) The method as in claims 19 or 20 further comprising optically imaging the mammal.

29. (CURRENTLY AMENDED) A method of therapy or diagnostic imaging a patient comprising administering a non-optical contrast agent composition further comprising the ~~compound~~ composition as in claims 4, 7, or 8 and performing at least one of ~~an optical imaging procedure or a non-optical imaging procedure~~ therapy or diagnostic imaging.

30. (PREVIOUSLY PRESENTED) The method of claim 29 wherein the non-optical contrast agent composition is selected from a magnetic resonance composition, a computed tomography composition, an x-ray composition, a nuclear imaging composition, a positron emission tomography composition, a single photon emission computed tomography composition, an optoacoustic imaging composition and an ultrasound composition.

31. (ORIGINAL) The method of claim 29 wherein the compound stabilizes or buffers the non-optical contrast agent composition.